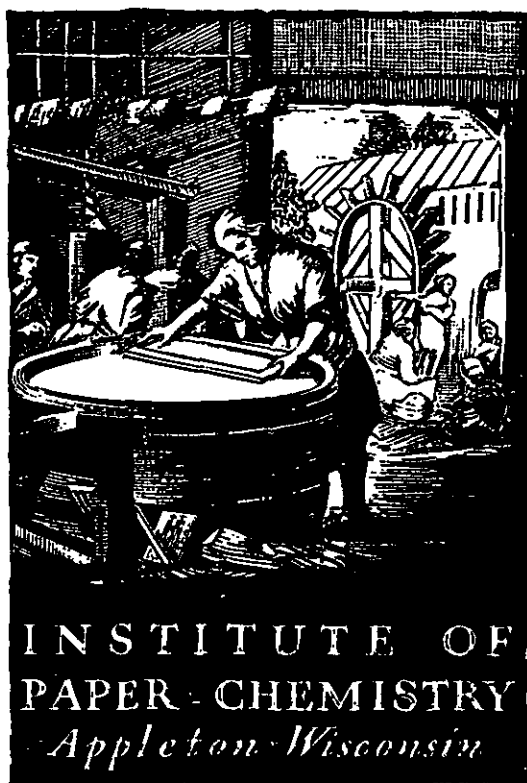


FILED DEC 28 1948

Institute of Paper Science and Technology
Central Files



CONTINUOUS BASELINE STUDY

✓ Project 1108-B

Progress Report 17
to
FOURDRINIER KRAFT BOARD INSTITUTE

December 1, 1948

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

CONTINUOUS BASELINE STUDY

Project 1108-B

Progress Report 17

to

FOURDRINIER KRAFT BOARD INSTITUTE

December 1, 1948

THE INSTITUTE OF PAPER CHEMISTRY

APPLETON, WISCONSIN

In conjunction with the F.K.I. Continuous Baseline Study, seventy-one different sample lots of 42-lb. Fourdrinier kraft linerboard were submitted by nine different F.K.I. mills to The Institute of Paper Chemistry for testing during the period November 1 through November 30. In addition to the 42-lb. kraft linerboard, four samples of special drum stock were also submitted for evaluation by one of the participating mills. The results on the special stock are tabulated separately in this report. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I
DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	4
B	10
C	10
D	11
E	0
F	7
G	8
H	11
J	<u>10</u>
	71

The above sample lots were tested for basis weight, caliper, bursting strength, G. E. puncture, and Elmendorf tear. A comparison of

the average strength results for each mill may be seen in Table II and graphically presented in Figures 1 to 6, inclusive. In addition to a comparison of the mill averages, Table II also shows the cumulative F.K.I. averages and the F.K.I. indexes. The cumulative F.K.I. averages include all the results up to but not including the current period; the current period in the case of this report is November 1 through November 30.

The F.K.I. index is obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.1 lb., and the cumulative F.K.I. average basis weight is also 43.1. Hence, the index for basis weight determined in per cent as indicated above is 100.0%. This signifies that the current average basis weight is the same as the cumulative average, which in this case covered the period from July 25, 1947, through October 31, 1948.

A comparison of the results in Table II and Figure I shows that the average basis weight for all mills submitting samples is above the 42-lb. specification set forth in Rule 41. Mill B has the highest average basis weight, it being 43.9 lb. or approximately 4.5% higher than the 42-lb. specification. On the other hand, Mill G has the lowest average basis weight, it being 42.5 lb. or approximately 1.2% higher than the 42-lb. specification. No samples of 42-lb. kraft linerboard were submitted by Mill E.

The amount by which the mills exceed the 42-lb. specification is as follows:

Mill Code	Per cent
A	1.4
B	4.5
C	2.9
D	3.1
E	--
F	4.0
G	1.2
H	1.7
J	3.1

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicates that the basis weight is slightly lower.

A comparison of the average calipers for the various mills (see Figure 2) shows that the mill averages vary from a low of 14.3 for Mill G to a high of 15.8 for Mill F, the average being 14.9 which is lower than the cumulative average of 15.0.

The average bursting strength values obtained for each mill are graphically shown in Figure 3. It may be observed that the average bursting strength for the various mills ranges from a low of 100 for Mill F to a high of 107 for Mill B. The current F.K.I. average bursting strength is 105, slightly higher than the cumulative average of 103.

The data of Table II and Figure 4 show that the average G. E. puncture for all mills is 36 units. It may be noted that Mill F has the highest G. E. puncture value and Mill J the lowest. In connection with Mill J, it may be observed that this mill had the lowest G. E. puncture during the last period. Further, the current F.K.I. average for G. E. puncture is lower than the cumulative F.K.I. average.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 5 and 6. The data of Table II show that Mill A has the highest average machine direction tear value, while Mill J has the lowest. Similarly, Mill A has the highest average across machine direction tear value while Mill J has the lowest. It may be noted that the current F.K.I. average machine direction and across-machine direction tear results are lower than the cumulative averages.

A comparison of the F.K.I. indexes indicates that, for the current period, the test averages for caliper, G. E. puncture, machine and across machine direction Elmendorf tear are lower than the respective cumulative averages while the test average for bursting strength is higher than the cumulative average and the test average for basis weight is the same as the cumulative average.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XII for Mills A to J, respectively. In addition to the current averages, cumulative averages for each mill, together with the mill factor and mill index, are given for each mill. The cumulative mill average is the average

test results obtained on the samples submitted by the particular mill up to, but not including, the current averages. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

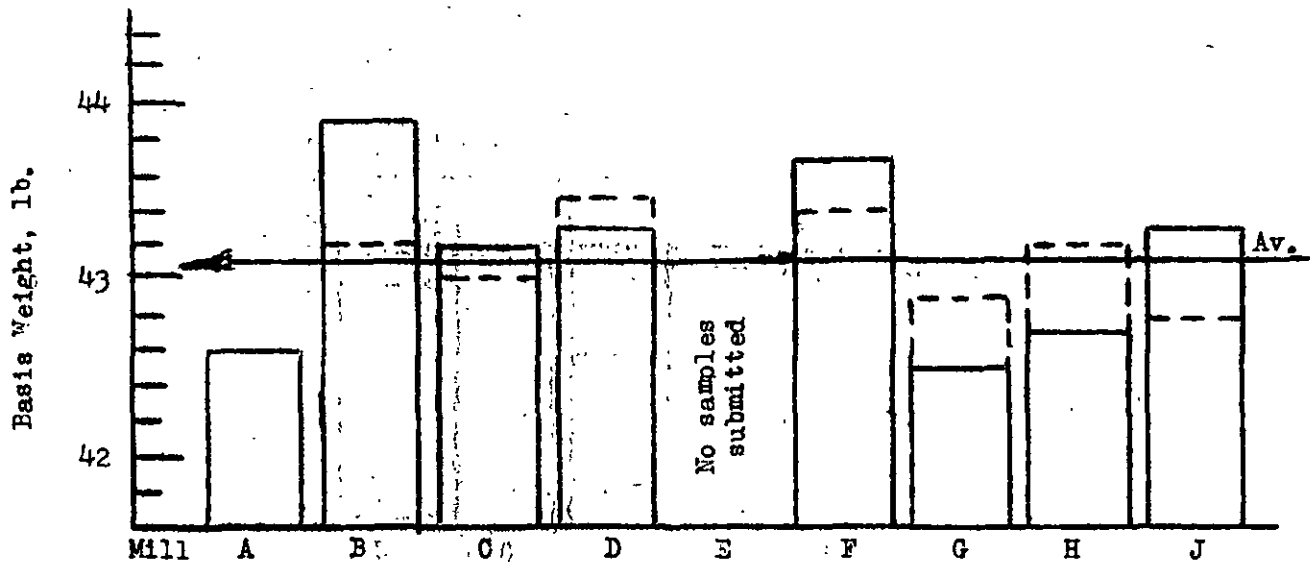
The mill factor and the mill index serve as a ready means for comparing the current mill results either with the previous result for that particular mill or with the cumulative F.K.I. results. As more samples are included and as the test data accumulate, the factors and indexes will have added significance. Since December, 1947, the reports have contained a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry.

The results obtained on the special drum stock may be seen in Table XII.

TABLE II
SUMMARY OF COMPOSITE MILL AVERAGES--NOVEMBER 1 THROUGH NOVEMBER 30, 1948

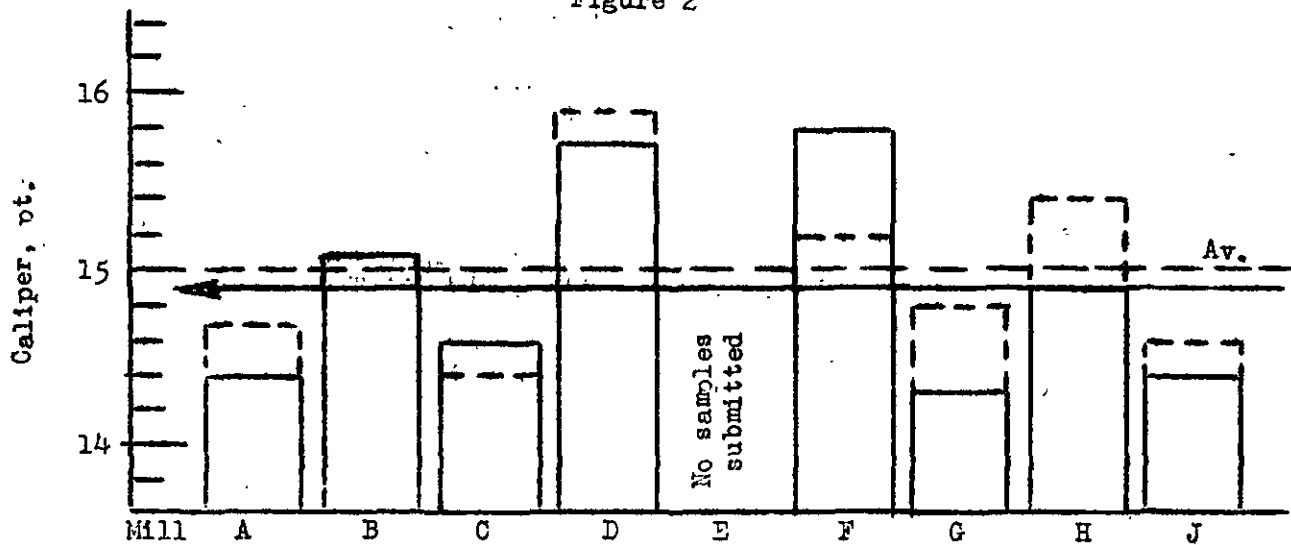
Code No.	Basis Weight, lb.	Caliper, points	JUMBO		G. E. Puncture, units	Elmendorf Tear, g./sheet	
			Mullen Burst, points	In Direction		Across Direction	
A	42.6	14.4	106	37	401+	434+	
B	43.9+	15.1	107+	34	369	397	
C	43.2	14.6	105	38	385	433	
D	43.3	15.7	105	36	382	404	
E	No samples submitted.						
F	43.7	15.8+	100-	40+	370	422	
G	42.5-	14.3-	104	36	362	401	
H	42.7	14.9	105	35	380	408	
J	43.3	14.4	104	31-	328-	362-	
Current FKI Average:							
	43.1	14.9	105	36	372	408	
Cumulative FKI Average:							
	43.1	15.0	103	38	384	415	
FKI Index, %							
	100.0	99.3	101.9	94.7	96.9	98.3	

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period Nov. 1 - Nov. 30)

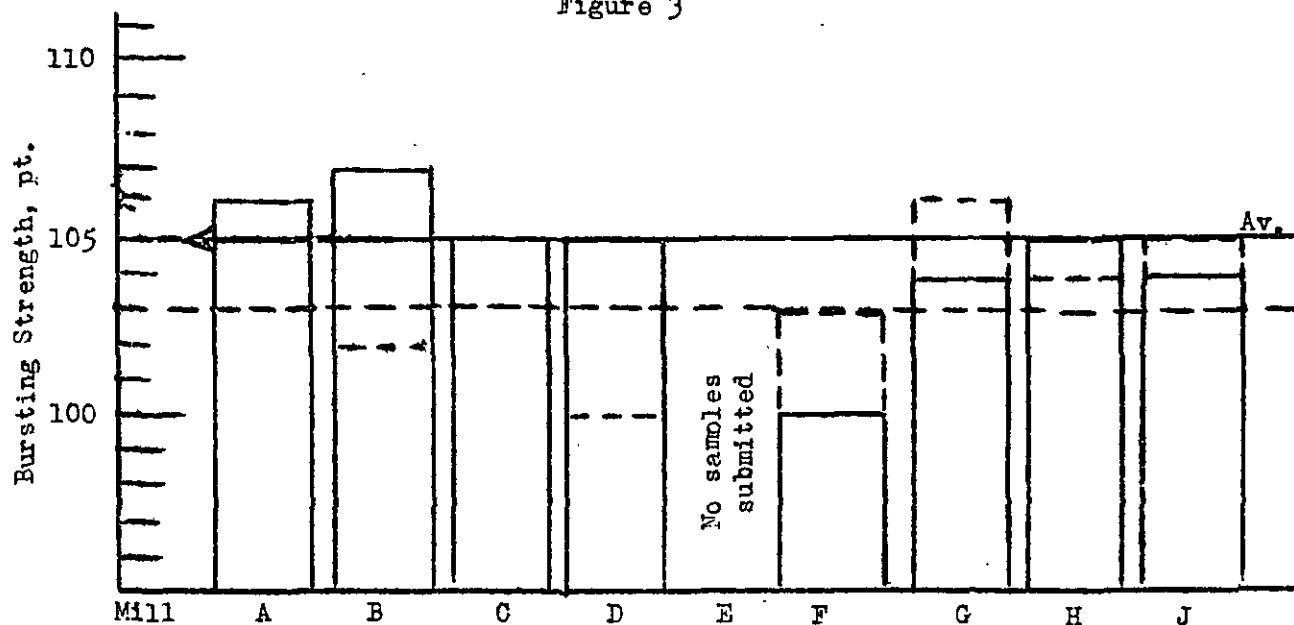
Figure 2



COMPARISON OF CALIPER RESULTS
(Period Nov. 1 - Nov. 30)

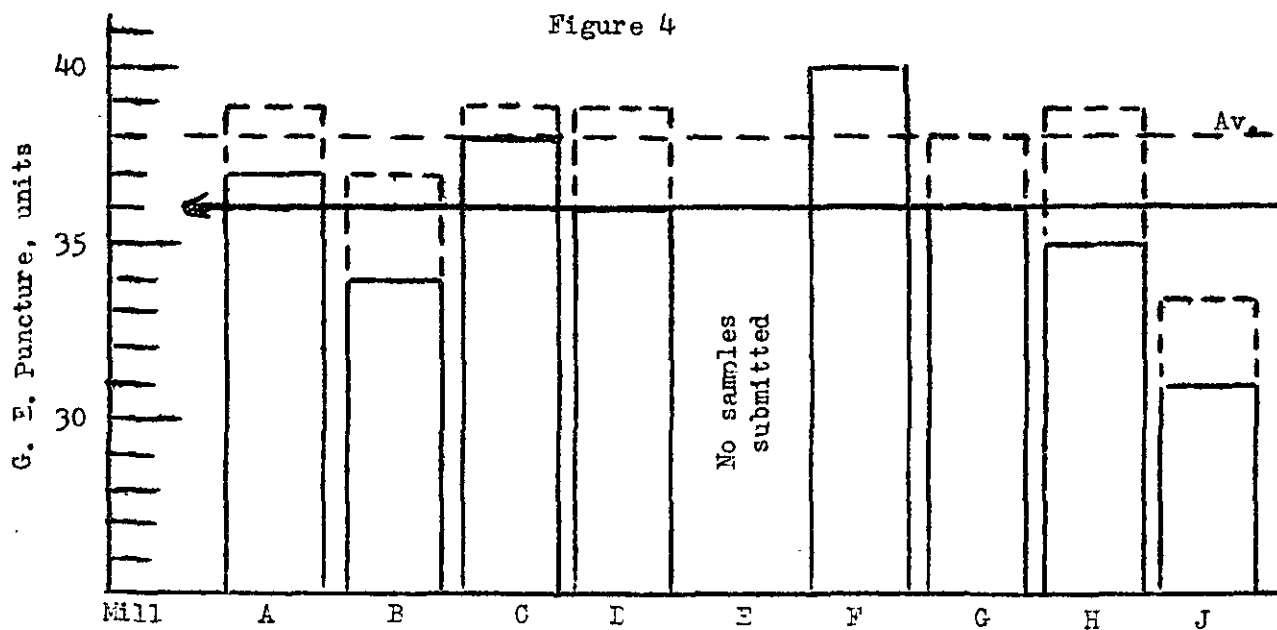
— Current Mill Average
--- Cumulative Mill Average

Figure 3



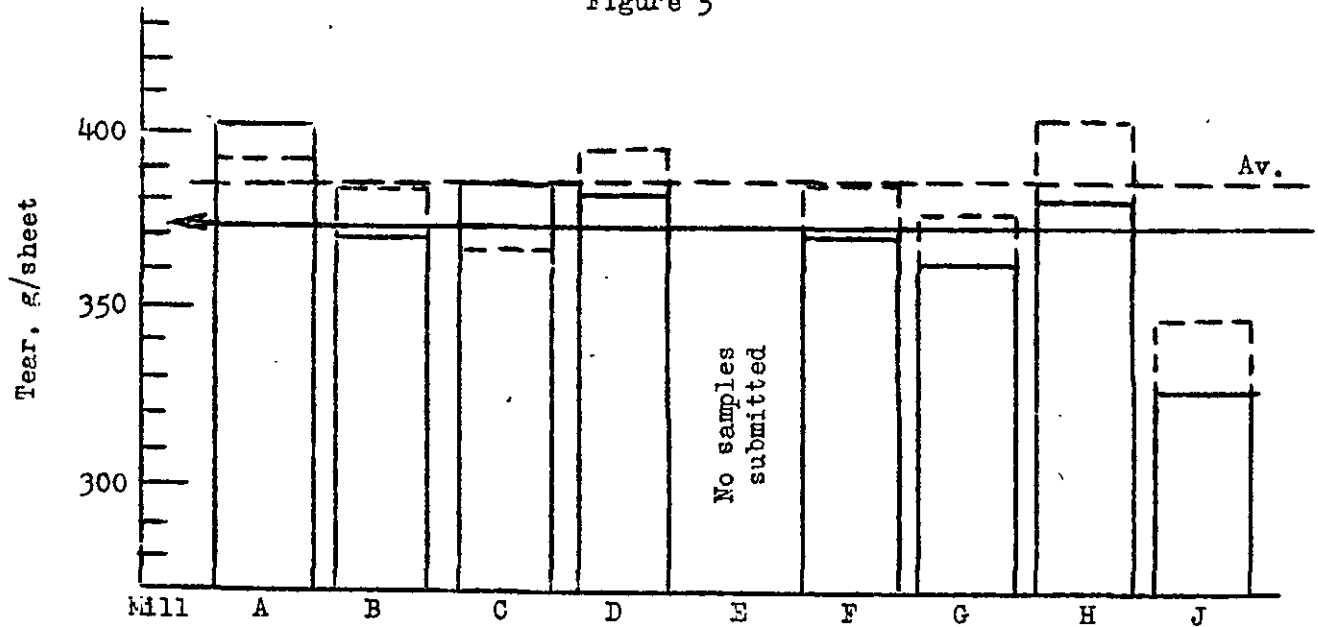
COMPARISON OF BURSTING STRENGTH RESULTS
(Period Nov. 1 - Nov. 30)

Figure 4



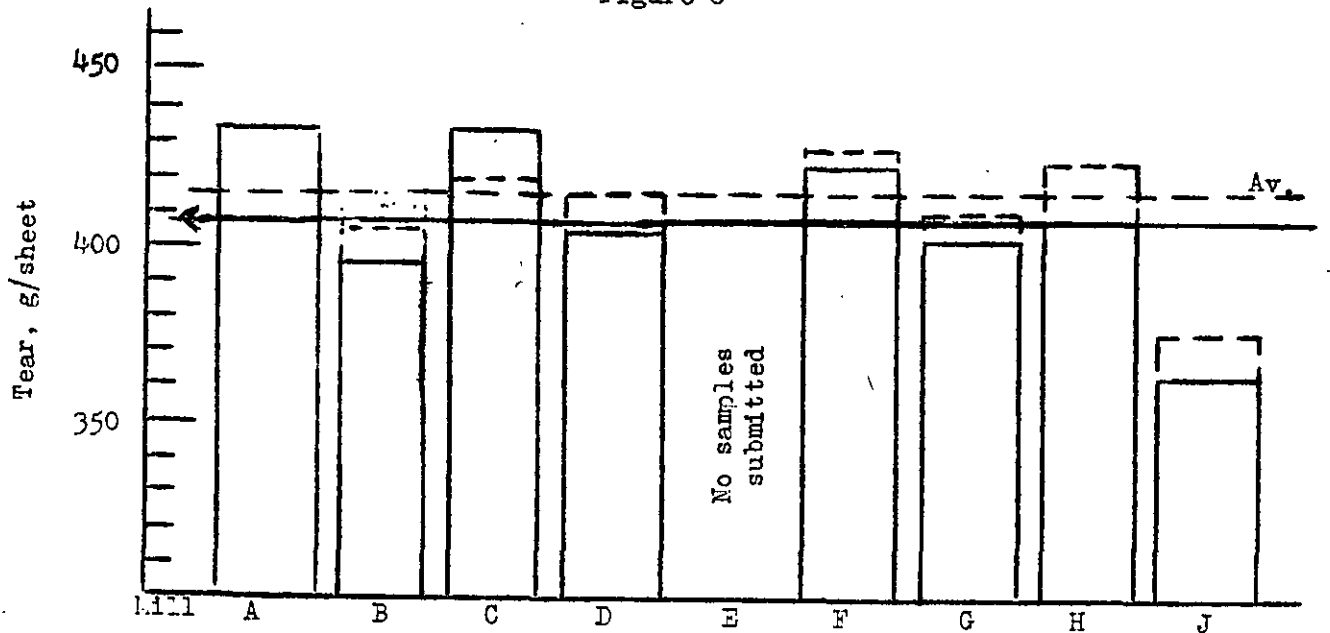
COMPARISON OF G. E. PUNCTURE RESULTS
(Period Nov. 1 - Nov. 30)

Figure 5



COMPARISON OF TEAR RESULTS, Machine Direction
(Period Nov. 1 - Nov. 30)

Figure 6



COMPARISON OF TEAR RESULTS, Across-Machine Direction
(Period Nov. 1 - Nov. 30)

TABLE III
SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948

Mch. No.	Basis Weight, lb.		Caliper, points		JUNBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across							
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.						
	Av.	Av.	Av.	Av.	Av.	Av.	Av.	Av.	Av.	Av.	Av.	Av.						
<u>Mill A--42-lb. Linerboard</u>																		
2	45.6	41.0	43.1	14.9	12.1	14.1	124	90	105	43	33	38	472	336	411 ^a	512	392	448 ^a
2	44.6	37.8	42.4	15.4	13.0	14.4	118	82	101	43	34	39	480	336	412	536	392	463 ^a
1	44.2	41.8	42.8	15.6	14.0	14.7	129	90	107	38	32	35	464	320	383	488	384	413 ^a
1	43.6	40.2	41.8	15.4	13.8	14.4	127	91	109	41	32	37	480	328	399	464	360	411 ^a
			42.6			14.4			106			37			401			434
			42.6			14.7			103			39			392			434
			100.0			98.0			102.9			94.9			102.3			100.0
			98.8			96.0			102.9			97.4			104.4			104.6

is for one or more specimens which tore beyond the 3/8-inch limit.

TABLE III

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendi g./ε						
					Max.	Min.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.				
Mill A--42-lb. Linerboard																			
134381	A-78	11/ 8/48	11/ 2/48	2	45.6	41.0	43.1	14.9	12.1	14.1	124	90	105	43	33	38	472	336	411 ^a
134382	A-79	11/ 8/48	11/ 3/48	2	44.6	37.8	42.4	15.4	13.0	14.4	118	82	101	43	34	39	480	336	412
134488	A-80	11/19/48	11/15/48	1	44.2	41.8	42.8	15.6	14.0	14.7	129	90	107	38	32	35	464	320	383
134489	A-81	11/19/48	11/16/48	1	43.6	40.2	41.8	15.4	13.8	14.4	127	91	109	41	32	37	480	328	399
Current Mill Average:					42.6			14.4			106		37						401
Cumulative Mill Average:					42.6			14.7			103		39						392
Mill Factor, %:					100.0			98.0			102.9		94.9						102.
Mill Index, %:					98.8			96.0			102.9		97.4						104.

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IV

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			JUNBO Mullen Burst, points			G. E. Puncture, units			In g./ε		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.			
Mill B--42-lb. Linerboard																			
134391	B-107	11/ 9/48	10/25/48	3	44.2	41.8	42.9	15.7	13.0	14.7	129	90	108	36	31	33	448	312	361
134392	B-108	11/ 9/48	10/26/48	3	45.8	43.0	44.7	16.5	14.6	15.4	124	92	108	36	33	34	416	296	361
134393	B-109	11/ 9/48	10/28/48	1	46.0	43.0	44.6	16.8	13.9	15.3	128	83	108	36	32	34	400	328	361
134394	B-110	11/ 9/48	10/29/48	1	45.8	43.4	44.7	16.5	14.5	15.5	120	91	107	38	31	34	432	320	381
134411	B-111	11/11/48	11/ 1/48	1	46.0	42.0	44.2	15.8	14.1	15.0	129	82	106	38	31	34	440	328	371
134412	G-112	11/11/48	11/ 1/48 ^b	1	46.0	42.6	44.5	15.5	14.0	14.9	128	90	108	37	30	34	432	336	371
134429	B-113	11/15/48	11/ 8/48	1	44.0	42.0	42.6	16.2	14.3	15.1	121	91	106	37	31	34	424	328	371
134493	B-114	11/20/48	11/10/48	3	45.6	41.8	43.9	15.8	13.9	15.0	119	88	106	38	30	34	416	320	351
134494	B-115	11/20/48	11/10/48 ^c	3	44.2	42.0	43.7	16.1	14.0	15.1	134	92	114	37	33	35	408	352	371
134565	B-116	11/27/48	11/17/48	3	45.0	41.6	43.1	15.6	13.4	14.7	119	61	101	38	33	35	424	296	351
Current Mill Average:							43.9		15.1			107				34			361
Cumulative Mill Average:							43.2		15.1			102				37			381
Mill Factor, %							101.6		100.0			104.9				91.9			91
Mill Index, %							101.9		100.7			103.9				89.5			91

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.^b This date was taken from the sample; the mill data sheet gives the date of manufacture as November 2, 1948.^c This date was taken from the sample; the mill data sheet gives the date of manufacture as November 11, 1948.

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst points		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across							
		Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.						
<u>Mill C--42-lb. Linerboard</u>																			
'25/48	1	44.2	42.6	43.7	15.4	14.1	14.9	129	68	104	39	35	37	464	312	386	504	360	444
'28/48	1	44.2	42.6	43.7	14.9	12.7	14.1	139	82	106	43	36	38	456	352	397 ^a	496	392	444 ^a
'1/48	1	44.0	42.0	42.6	15.4	12.9	14.6	122	75	105	41	34	37	424	328	371 ^a	464	358	415 ^a
'4/48	1	44.0	41.8	42.7	16.0	13.8	14.8	136	78	104	40	34	37	432	288	383	496	392	435 ^a
'8/48	1	44.2	42.6	43.6	15.7	13.7	14.8	127	84	105	42	33	37	440	328	380 ^a	472	392	421 ^a
'11/48	1	44.6	42.4	43.6	15.5	14.2	14.8	132	86	106	42	35	38	440	336	369	488	368	417 ^a
'15/48	1	43.6	42.0	42.9	15.2	13.1	14.6	134	81	107	42	37	39	440	344	385	456	360	420 ^a
'15/48	1	44.0	41.0	42.7	15.2	13.8	14.7	132	88	107	42	36	39	416	328	372 ^a	496	384	435 ^a
'22/48	1	44.6	42.2	43.7	15.2	13.3	14.4	129	81	105	43	36	40	440	376	406 ^a	496	400	444 ^a
'25/48	1	44.2	42.0	43.0	15.0	12.8	14.3	130	82	100	44	37	40	456	344	405	520	408	453
				43.2			14.6		105				38			385			433
				43.0			14.4		105				39			367			420
				100.5			101.4		100.0				97.4			104.9			103.1
				100.2			97.3		101.9				100.0			100.3			104.3

readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE V

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst points		G. E. Puncture, units		Elmendorf g./she. in						
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.			
<u>Mill C--42-lb. Linerboard</u>																			
134250	C-73	11/ 1/48	10/25/48	1	44.2	42.6	43.7	15.4	14.1	14.9	129	68	104	39	35	37	464	312	386
134281	C-74	11/ 2/48	10/28/48	1	44.2	42.6	43.7	14.9	12.7	14.1	139	82	106	43	36	38	456	352	397
134369	C-75	11/ 6/48	11/ 1/48	1	44.0	42.0	42.6	15.4	12.9	14.6	122	75	105	41	34	37	424	328	371
134390	C-76	11/ 9/48	11/ 4/48	1	44.0	41.8	42.7	16.0	13.8	14.8	136	78	104	40	34	37	432	288	383
134422	C-77	11/12/48	11/ 8/48	1	44.2	42.6	43.6	15.7	13.7	14.8	127	84	105	42	33	37	440	328	380
134490	C-78	11/19/48	11/11/48	1	44.6	42.4	43.6	15.5	14.2	14.8	132	86	106	42	35	38	440	336	369
134495	C-79	11/20/48	11/15/48	1	43.6	42.0	42.9	15.2	13.1	14.6	134	81	107	42	37	39	440	344	385
134496	C-80	11/20/48	11/15/48	1	44.0	41.0	42.7	15.2	13.8	14.7	132	88	107	42	36	39	416	328	372
134566	C-81	11/27/48	11/22/48	1	44.6	42.2	43.7	15.2	13.3	14.4	129	81	105	43	36	40	440	376	406
134643	C-82	11/30/48	11/25/48	1	44.2	42.0	43.0	15.0	12.8	14.3	130	82	100	44	37	40	456	344	405
Current Mill Average:							43.2		14.6			105			38				385
Cumulative Mill Average:							43.0		14.4			105			39				367
Mill Factor, %:							100.5		101.4			100.0			97.4				104
Mill Index, %:							100.2		97.3			101.9			100.0				100

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet									
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	In	Max.	Min.	Across						
<u>Mill D-42-lb. Linerboard</u>																		
3	44.2	42.0	43.1	16.9	14.9	15.7	115	76	97	38	30	35	528	352	393 ^a	472	376	433 ^a
3	43.8	42.0	43.3	17.1	15.0	16.5	129	81	105	39	32	36	440	376	403 ^a	480	368	410 ^a
3	43.6	42.0	42.4	16.3	14.5	15.4	129	72	102	36	30	32	456	344	382 ^a	416	360	384 ^a
3	44.2	42.2	43.4	16.8	14.1	15.6	120	85	104	39	33	36	424	328	367 ^a	448	376	404 ^a
3	44.4	42.0	43.5	16.5	14.1	15.4	135	83	104	38	31	35	464	328	373 ^a	432	360	395 ^a
3	45.8	43.6	44.8	17.3	14.9	16.0	123	85	102	39	32	36	408	328	379 ^a	448	384	411 ^a
3	44.0	42.2	43.6	16.4	14.9	15.7	128	89	114	39	33	36	464	344	394 ^a	464	352	397 ^a
3	44.0	42.0	42.8	16.8	14.6	15.7	131	87	111	39	31	36	408	312	361 ^a	464	376	397 ^a
3	44.4	42.2	43.3	16.5	14.3	15.6	130	77	110	43	35	38	440	352	389 ^a	448	376	420 ^a
3	44.0	42.0	42.8	16.4	14.1	15.7	119	87	106	39	33	37	416	320	372 ^a	424	296	371 ^a
3	43.8	42.0	42.9	16.9	15.1	15.9	120	82	101	40	33	37	416	352	389 ^a	464	368	423 ^a
			43.3			15.7		105				36			382		404	
			43.5			15.9		100				39			396		416	
			99.5			98.7		105				92.3			96.5		97.1	
			100.5			104.7		101.9				94.7			99.5		97.3	

ings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VI

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUNBO Mullen Burst, points		G. E. Puncture, units		Elmen g. In					
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.	Max.	Min.	Av.	
Mill D-42-lb. Linerboard																		
134321	D-50	11/ 3/48	10/30/48	4	44.2	42.0	43.1	16.9	14.9	15.7	115	76	97	38	30	35	528	352
134322	D-51	11/ 3/48	10/31/48	4	43.8	42.0	43.3	17.1	15.0	16.5	129	81	105	39	32	36	440	376
134336	D-52	11/ 4/48	11/ 1/48	4	43.6	42.0	42.4	16.3	14.5	15.4	129	72	102	36	30	32	456	344
134366	D-53	11/ 6/48	11/ 3/48	4	44.2	42.2	43.4	16.8	14.1	15.6	120	85	104	39	33	36	424	328
134406	D-54	11/10/48	11/ 6/48	4	44.4	42.0	43.5	16.5	14.1	15.4	135	83	104	38	31	35	464	328
134407	D-55	11/10/48	11/ 7/48	4	45.8	43.6	44.8	17.3	14.9	16.0	123	85	102	39	32	36	408	328
134486	D-56	11/19/48	11/16/48	4	44.0	42.2	43.6	16.4	14.9	15.7	128	89	114	39	33	36	464	344
134487	D-57	11/19/48	11/17/48	4	44.0	42.0	42.8	16.8	14.6	15.7	131	87	111	39	31	36	408	312
134507	D-58	11/22/48	11/18/48	4	44.4	42.2	43.3	16.5	14.3	15.6	130	77	110	43	35	38	440	352
134508	D-59	11/22/48	11/19/48	4	44.0	42.0	42.8	16.4	14.1	15.7	119	87	106	39	33	37	416	320
134549	D-60	11/26/48	11/20/48	4	43.8	42.0	42.9	16.9	15.1	15.9	120	82	101	40	33	37	416	352
Current Mill Average:					43.3		15.7		105		36							
Cumulative Mill Average:					43.5		15.9		100		39							
Mill Factor, %:					99.5		98.7		105		92.3							
Mill Index, %:					100.5		104.7		101.9		94.7							

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE VII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across	
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.

Mill E--42-lb. Linerboard

No samples submitted

TABLE VIII

Mill F--42-lb. Linerboard

--	43.8	42.0	42.5	15.9	13.9	14.9	120	89	105	38	30	34	352	288	328	448	376	397 ^a
--	46.0	43.0	45.0	16.6	15.0	16.0	108	75	98	41	35	39	432	320	387	456	376	417 ^a
--	45.6	43.8	44.5	16.9	14.8	15.8	113	77	99	50	41	44	432	352	390	464	360	413 ^a
--	45.8	44.0	44.7	17.8	16.0	17.0	102	77	94	45	37	41	400	320	363	472	384	430
--	43.8	42.0	43.2	16.3	15.0	15.5	120	82	98	43	37	40	408	320	366	504	384	431 ^a
--	44.2	43.0	43.6	16.4	14.8	15.5	120	90	105	43	38	40	424	368	389	512	384	441 ^a
--	43.4	41.8	42.4	16.7	15.1	15.7	120	75	100	43	35	39	408	336	366	480	384	427 ^a
			43.7			15.8			100			40			370			422
			43.4			15.2			103			40			385			428
			100.7			103.9			97.1			100.0			96.1			98.6
			101.4			105.3			97.1			105.3			96.4			101.7

3s for one or more specimens which tore beyond the 3/8-inch limit.
ple; the mill data sheet gives the date of manufacture as November 8, 1948.
ple; the mill data sheet gives the date of manufacture as November 12, 1948.

TABLE VII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendor g./st. In
					Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.

Mill E--42-lb. Linerboard

No samples submitted

TABLE VIII

Mill F--42-lb. Linerboard

134337	F-64	11/ 4/48	10/27/48	--	43.8	42.0	42.5	15.9	13.9	14.9	120	89	105	38	30	34	352	288	321
134338	F-65	11/ 4/48	10/30/48	--	46.0	43.0	45.0	16.6	15.0	16.0	108	75	98	41	35	39	432	320	387
134428	F-66	11/13/48	11/ 6/48 ^b	--	45.6	43.8	44.5	16.9	14.8	15.8	113	77	99	50	41	44	432	352	391
134471	F-67	11/18/48	10/ 8/48	--	45.8	44.0	44.7	17.8	16.0	17.0	102	77	94	45	37	41	400	320	361
134472	F-68	11/18/48	11/10/48	--	43.8	42.0	43.2	16.3	15.0	15.5	120	82	98	43	37	40	408	320	361
134505	F-69	11/22/48	11/10/48 ^c	--	44.2	43.0	43.6	16.4	14.8	15.5	120	90	105	43	38	40	424	368	381
134528	F-70	11/24/48	11/13/48	--	43.4	41.8	42.4	16.7	15.1	15.7	120	75	100	43	35	39	408	336	361
Current Mill Average:					43.7			15.8				100				40			371
Cumulative Mill Average:					43.4			15.2				103				40			381
Mill Factor, %:					100.7			103.9				97.1				100.0			91
Mill Index, %:					101.4			105.3				97.1				105.3			91

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.^b This date was taken from the sample; the mill data sheet gives the date of manufacture as November 8, 1948.^c This date was taken from the sample; the mill data sheet gives the date of manufacture as November 12, 1948.

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

e	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		In g./sheet		Across		Av.	Max. Min.	Av.	Max. Min.	Av.	Max. Min.
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.						
Mill G--42-lb. Linerboard																			
48	1	44.0	42.4	43.4	14.7	12.4	13.8	124	85	111	38	33	36	440	336	385	440	368	407 ^a
48	1	42.4	41.0	42.0	14.5	12.4	13.6	118	78	103	40	34	37	440	320	365 ^a	448	368	409 ^a
48	1	42.2	40.4	41.6	15.7	14.3	14.9	131	83	105	35	31	33	344	288	325	424	360	388 ^a
48	1	44.4	42.2	43.7	15.9	14.4	15.1	123	70	104	42	36	38	400	328	373 ^a	512	376	421 ^a
48	1	43.8	40.0	42.5	13.6	12.1	12.9	120	87	103	38	31	34	376	296	337 ^a	464	336	391 ^a
48	1	43.8	42.0	43.1	15.0	14.0	14.5	126	87	102	40	36	38	408	344	377	440	376	402 ^a
48	1	42.2	41.6	42.0	15.3	14.0	14.6	118	78	101	42	35	38	376	336	359 ^a	432	368	401 ^a
48	1	42.2	41.0	41.7	15.6	14.1	14.9	117	92	105	41	34	37	400	336	376	432	360	391 ^a
		42.5					14.3		104				36		362				401
		42.9					14.8		106				38		377				410
		99.1					96.6		98.1				94.7		96.0				97.8
		98.6					95.3		101.0				94.7		94.3				96.6

readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE IX

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmending, g./in							
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.						
Mill G--42-lb. Linerboard																				
134367	G-98	11/ 6/48	11/ 3/48	1	44.0	42.4	43.4	14.7	12.4	13.8	124	85	111	38	33	36	440	336	38	
134368	G-99	11/ 6/48	11/ 4/48	1	42.4	41.0	42.0	14.5	12.4	13.6	118	78	103	40	34	37	440	320	36	
134434	G-100	11/15/48	11/ 9/48	1	42.2	40.4	41.6	15.7	14.3	14.9	131	83	105	35	31	33	344	288	32	
134435	G-101	11/15/48	11/12/48	1	44.4	42.2	43.7	15.9	14.4	15.1	123	70	104	42	36	38	400	328	37	
134497	G-102	11/20/48	11/15/48	1	43.8	40.0	42.5	13.6	12.1	12.9	120	87	103	38	31	34	376	296	33	
134498	G-103	11/20/48	11/17/48	1	43.8	42.0	43.1	15.0	14.0	14.5	126	87	102	40	36	38	408	344	37	
134526	G-104	11/24/48	11/22/48	1	42.2	41.6	42.0	15.3	14.0	14.6	118	78	101	42	35	38	376	336	35	
134527	G-105	11/24/48	11/22/48	1	42.2	41.0	41.7	15.6	14.1	14.9	117	92	105	41	34	37	400	336	37	
Current Mill Average:					42.5		14.3		104		36		36		36		440		36	
Cumulative Mill Average:					42.9		14.8		106		38		37		37		440		37	
Mill Factor, %					99.1		96.6		98.1		94.7		9		9		440		9	
Mill Index, %:					98.6		95.3		101.0		94.7		9		9		440		9	

a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet		In		Across					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
<u>MILL H-42-lb. Linerboard</u>																		
3	44.2	41.8	42.6	15.4	14.6	15.0	125	81	101	37	32	34	424	320	375	448	368	409 ^a
2	42.8	40.0	41.4	16.5	14.7	15.4	112	83	100	36	31	33	440	320	383 ^a	440	368	410 ^a
2	44.2	41.2	43.0	16.0	14.2	15.2	117	84	101	37	33	35	456	352	391 ^a	456	344	411 ^a
2	42.4	41.0	41.9	15.6	13.7	14.6	132	92	109	36	31	33	416	312	356 ^a	432	360	397 ^a
2	44.2	42.6	43.7	16.0	12.9	15.1	131	85	108	39	33	36	424	352	391 ^a	448	368	417 ^a
3	43.8	41.6	42.7	15.8	13.8	14.7	116	70	103	41	33	37	392	256	347	472	368	417 ^a
3	43.6	40.4	42.3	15.2	13.8	14.5	123	85	107	38	31	34	392	280	357	432	360	401 ^a
2	44.0	42.0	43.1	16.1	14.9	15.4	119	89	104	40	34	37	440	312	387	472	368	413 ^a
2	45.0	42.0	43.5	16.0	14.0	15.0	125	81	103	39	34	36	464	336	403 ^a	472	384	422 ^a
2	43.4	42.2	42.7	15.2	12.8	14.2	130	93	111	38	32	36	456	344	395	440	352	396 ^a
2	43.6	42.0	42.7	15.7	13.3	14.5	132	85	110	38	34	35	472	328	401 ^a	432	352	397 ^a
			42.7			14.9			105			35			380			408
			43.2			15.4			104			39			403			424
			98.8			96.8			101.0			89.7			94.3			96.2
			99.1			99.3			101.9			92.1			99.0			98.3

ings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE X

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet							
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	In	Max.	Min.	Av.			
Mill H-42-lb. Linerboard																				
134251	H-79	11/ 1/48	10/25/48	3	44.2	41.8	42.6	15.4	14.6	15.0	125	81	101	37	32	34	424	320	375	4
134252	H-80	11/ 1/48	10/25/48	2	42.8	40.0	41.4	16.5	14.7	15.4	112	83	100	36	31	33	440	320	383 ^a	4
134253	H-82	11/ 1/48	10/26/48	2	44.2	41.2	43.0	16.0	14.2	15.2	117	84	101	37	33	35	456	352	391 ^a	4
134377	H-83	11/8/48	11/ 2/48	2	42.4	41.0	41.9	15.6	13.7	14.6	132	92	109	36	31	33	416	312	356 ^a	4
134380	H-84	11/ 8/48	11/ 3/48	2	44.2	42.6	43.7	16.0	12.9	15.1	131	85	108	39	33	36	424	352	391 ^a	4
134430	H-85	11/15/48	11/ 8/48	3	43.8	41.6	42.7	15.8	13.8	14.7	116	70	103	41	33	37	392	256	347	4
134431	H-86	11/15/48	11/ 9/48	3	43.6	40.4	42.3	15.2	13.8	14.5	123	85	107	38	31	34	392	280	357	4
134499	H-87	11/20/48	11/15/48	2	44.0	42.0	43.1	16.1	14.9	15.4	119	89	104	40	34	37	440	312	387	4
134506	H-88	11/22/48	11/16/48	2	45.0	42.0	43.5	16.0	14.0	15.0	125	81	103	39	34	36	464	336	403 ^a	4
134568	H-89	11/29/48	11/22/48	2	43.4	42.2	42.7	15.2	12.8	14.2	130	93	111	38	32	36	456	344	395	4
134569	H-90	11/29/48	11/23/48	2	43.6	42.0	42.7	15.7	13.3	14.5	132	85	110	38	34	35	472	328	401 ^a	4
Current Mill Average						42.7		14.9			105			35					380	
Cumulative Mill Average:						43.2		15.4			104			39					403	
Mill Factor, %:						98.8		96.8			101.0			89.7					94.3	
Mill Index, %:						99.1		99.3			101.9			92.1					99.0	

^aThis average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XI

MARY OF INDIVIDUAL TEST LOIS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet		Across							
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	In	Max.	Min.	Av.						
<u>Mill J--42-lb. Linerboard</u>																		
1	45.0	41.8	43.9	15.9	13.7	14.5	132	80	105	34	28	31	344	272	308 ^a	400	328	356 ^a
1	44.0	40.0	42.8	15.9	14.7	15.3	125	84	99	33	28	30	400	272	314 ^a	432	336	363 ^a
1	45.0	42.2	43.6	15.4	13.0	14.4	120	86	101	36	29	33	416	304	351 ^a	400	336	371 ^a
1	45.6	42.0	43.7	14.9	12.6	13.8	130	84	103	33	27	31	384	288	340 ^a	408	304	347 ^a
1	44.0	42.0	43.1	15.0	12.7	14.0	130	94	111	32	28	30	360	272	311 ^a	416	328	359 ^a
1	44.0	42.2	43.0	15.5	13.0	14.0	127	89	107	32	29	30	392	272	328	384	288	355 ^a
1	44.4	42.4	43.6	15.7	13.4	14.3	120	84	109	34	31	32	360	288	331 ^a	368	336	354 ^a
1	44.2	42.2	43.5	15.9	14.5	15.5	114	80	97	35	31	33	376	272	335	392	336	348 ^a
1	43.2	41.8	42.4	14.9	13.1	14.3	117	81	102	33	28	31	384	280	333 ^a	456	328	382 ^a
1	44.2	42.2	43.4	14.6	13.0	14.1	137	90	109	36	30	33	360	296	327 ^a	432	344	383 ^a
			43.3			14.4			104			31			328			362
			42.8			14.6			105			33			347			376
			101.2			98.6			99.0			93.9			94.5			96.3
			100.5			96.0			101.0			81.6			85.4			87.2

s for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XI

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points	JUMBO Mullen Burst, points		G. E. Puncture, units							
					Max.	Min.		Max.	Min.	Max.	Min.						
Mill J--42-lb. Linerboard																	
134282	J-85	11/2 /48	10/29/48	1	45.0	41.8	43.9	15.9	13.7	14.5	132	80	105	34	28	31	344
134283	J-86	11/ 2/48	10/29/48	1	44.0	40.0	42.8	15.9	14.7	15.3	125	84	99	33	28	30	400
134378	J-87	11/ 8/48	11/ 4/48	1	45.0	42.2	43.6	15.4	13.0	14.4	120	86	101	36	29	33	416
134379	J-88	11/ 8/48	11/ 6/48	1	45.6	42.0	43.7	14.9	12.6	13.8	130	84	103	33	27	31	384
134432	J-89	11/15/48	11/12/48	1	44.0	42.0	43.1	15.0	12.7	14.0	130	94	111	32	28	30	360
134433	J-90	11/15/48	11/12/48	1	44.0	42.2	43.0	15.5	13.0	14.0	127	89	107	32	29	30	392
134550	J-91	11/26/48	11/20/48	1	44.4	42.4	43.6	15.7	13.4	14.3	120	84	109	34	31	32	360
134551	J-92	11/26/48	11/20/48	1	44.2	42.2	43.5	15.9	14.5	15.5	114	80	97	35	31	33	376
134552	J-93	11/26/48	11/24/48	1	43.2	41.8	42.4	14.9	13.1	14.3	117	81	102	33	28	31	384
134553	J-94	11/26/48	11/24/48	1	44.2	42.2	43.4	14.6	13.0	14.1	137	90	109	36	30	33	360
Current Mill Average:							43.3		14.4		104					31	
Cumulative Mill Average							42.8		14.6		105					33	
Mill Factor, %:							101.2		98.6		99.0					93.9	
Mill Index, %:							100.5		96.0		101.0					81.6	

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet				Across					
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.			
<u>Mill E--44/46-lb. Drum Linerboard</u>																		
3	47.8	45.6	46.7	13.8	12.7	13.0	108	72	90	43	36	39	472	368	425 ^a	456	376	413 ^a
3	49.8	46.2	48.2	15.0	13.1	13.8	131	95	112	44	39	41	488	408	447 ^a	504	424	461 ^a
3	48.4	47.2	48.1	15.1	13.3	14.0	112	78	95	47	40	43	560	448	497 ^a	520	400	456 ^a
3	49.8	47.8	48.6	14.7	13.7	14.2	110	75	94	47	39	42	504	416	469 ^a	464	400	434 ^a
			47.9			13.8			98			41			460		441	
			46.8			14.2			95			42			438		447	
			102.4			97.2			103.2			97.6			105.0			98.7

ings for one or more specimens which tore beyond the 3/8-inch limit.

TABLE XII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

File No.	Mill Code	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		In Max. Min.					
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.		Av.				
Mill E--44/46-lb. Drum Linerboard																		
134365	E-45	11/ 6/48	11/ 4/48	1	47.8	45.6	46.7	13.8	12.7	13.0	108	72	90	43	36	39	472	368
134410	E-46	11/11/48	11/ 8/48	1	49.8	46.2	48.2	15.0	13.1	13.8	131	95	112	44	39	41	488	408
134491	E-47	11/19/48	11/16/48	1	48.4	47.2	48.1	15.1	13.3	14.0	112	78	95	47	40	43	560	448
134548	E-48	11/26/48	11/23/48	1	49.8	47.8	48.6	14.7	13.7	14.2	110	75	94	47	39	42	504	416
Current Mill Average:							47.9			13.8			98			41		
Cumulative Mill Average:							46.8			14.2			95			42		
Mill Factor, %:							102.4			97.2			103.2			97.6		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XIII, the atmospheric conditions used prior to and during the testing period varied considerably.

TABLE XIII

Mill Code	Preconditioning			Conditioning		
	R.H., %	Temp., ° F.	Time, hr.	R.H., %	Temp., ° F.	Time, hr.
A	No preconditioning			63-87	77-84	--
B	43-74	72-82	1/2	50	70	24
C	48-70	72-76	24-144	49-70	72-76	12-72
D	35	74-76	24	53-58	75-78	24
E	No samples submitted					
F	No preconditioning			No conditioning		
G	No preconditioning			No conditioning		
H	No preconditioning			50	73	24
J	No preconditioning			32-76	72-90	--

A summary of the mill comparisons for the current period as compared with the previous period may be seen in Tables XIV and XV, respectively. The comparison for the various mills is given in Tables XVI to XXIV, inclusive, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XXV. In all the comparisons given in Tables XIV to XXV, inclusive, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XIV and XV indicates that in the majority of cases there is good agreement between the mill data and that of the Institute. As may be seen in Table XV, the maximum variation in the average basis weight between the results of the Institute and those of a given mill on corresponding samples is 2% for the current period. In regard to caliper for the current period, the results for all mills are lower than those for the Institute, with the exception of Mills B and J whose results are the same. None of the differences appear to be significantly large. It may be observed on reviewing the bursting strength results that the averages for Mills A, B, D, F, and J are lower than those for the Institute, whereas the averages for Mills C and H are higher and that for Mill G is the same. None of the differences appear to be significantly large. With the exception of Mill J which is the same, the G. E. puncture results for all mills are higher than the reference values, Mills A, C, G, and H having the greatest variation. Mills A and D have the greatest variation for machine direction tear. The variations encountered for Mills F, G, and J are substantially less than for the preceding period.

The data in Table XV also show the comparison of the average per cent differences between mill and Institute test results for the past three periods. It may be noted that the maximum variation in basis weight encountered during this time amounts to approximately 4%. The maximum average variation encountered in the basis weight results for the current period is commensurate with the variations for the preceding periods.

It may also be noted that the variation encountered in the caliper results for the current period is somewhat less than that for the preceding period. The variations in bursting strength and G. E. puncture results for the current period appear to be approximately the same as those for the previous period. In considering the machine and across machine direction tear results for the current period, it appears that the variations for Mills F and J are significantly smaller.

TABLE XIV
SUMMARY OF TEST RESULT COMPARISONS

Average Mill and Institute Results	Mills*									
	A	B	C	D	E	F	G	H	J	
No. Samples Compared	4	10	10	11	0	7	8	11	10	
Basis Weight										
Institute	42.6	43.9	43.2	43.3	---	43.7	42.5	42.7	43.3	
Mill	42.4	43.6	42.5	43.3	---	43.3	42.8	43.1	42.5	
Av. difference**	-0.2	-0.3	-0.7	0.0	---	-0.4	+0.3	+0.4	-0.8	
Max. difference***	-0.8	-0.8	-1.3	+0.9	---	-0.7	+1.2	+1.3	-1.3	
Caliper										
Institute	14.4	15.1	14.6	15.7	---	15.8	14.3	14.9	14.4	
Mill	14.3	15.1	14.4	15.6	---	15.3	13.8	14.7	14.4	
Av. difference**	-0.1	0.0	-0.2	-0.1	---	-0.5	-0.5	-0.2	0.0	
Max. difference***	-0.6	+0.4	-0.3	-0.7	---	-0.8	-0.9	-0.6	+0.6	
Bursting Strength										
Institute	106	107	105	105	---	100	104	105	104	
Mill	105	106	109	103	---	99	104	106	100	
Av. difference**	-1	-1	+4	-2	---	-1	0	+1	-4	
Max. difference***	-4	-6	+7	-7	---	-4	-10	+4	-11	
G. E. Puncture										
Institute	37	34	38	36	---	40	36	35	31	
Mill	42	35	43	---	---	42	39	37	31	
Av. difference**	+5	+1	+5	---	---	+2	+3	+2	0	
Max. difference***	+6	+2	+7	---	---	+7	+5	+5	-5	
Tearing Strength, in										
Institute	401	369	385	382	---	370	362	380	328	
Mill	436	357	395	342	---	365	372	371	326	
Av. difference**	+35	-12	+10	-40	---	-5	+10	-9	-2	
Max. difference***	+48	-71	+60	-66	---	-26	+29	-35	-54	
Tearing Strength, across										
Institute	434	397	433	404	---	422	401	408	362	
Mill	453	380	454	403	---	428	402	414	374	
Av. difference**	+19	-17	+21	-1	---	+6	+1	+6	+12	
Max. difference***	+51	-58	+51	-36	---	+36	-18	+35	+87	

* Comparison based on averages involves only those samples on which mill test data were submitted.

** Average difference is the difference between the Institute mill average and the mill average based on mill test data.

*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XV

SUMMARY OF TEST RESULTS--COMPARISON BY PERIODS

	Average Difference, per cent					
	Basis		Bursting	G. E.	Tearing	Tearing
	Weight	Caliper	Strength	Puncture	Strength, In	Strength, Across
Mill A						
Current period	-0.5	-0.7	-0.9	+14	+9	+4
16th period	-0.7	-2	+2	+18	-3	-4
15th period	-0.9	-7	-5	+22	+5	+5
Mill B						
Current period	-0.7	0	-0.9	+3	-3	-4
16th period	-0.7	0	0	+3	-3	-3
15th period	-0.9	0	+1	+6	-9	-6
Mill C						
Current period	-2	-1	+4	+13	+3	+5
16th period	-0.9	-2	+3	+14	+5	+6
15th period	-0.2	-1	+2	+19	+12	+13
Mill D						
Current period	0	-0.6	-2	--	-10	-0.2
16th period	-3	-4	-1	--	-12	-1
15th period	-4	-2	+1	--	-5	+4
Mill E						
Current period	--	--	--	--	--	--
16th period	-3	-4	0	-14	-28	-18
15th period	--	--	--	--	--	--
Mill F						
Current period	-0.9	-3	-1	+5	-1	+1
16th period	-0.2	-4	-4	+14	+7	+11
15th period	-0.2	-2	-5	+22	+10	+18
Mill G						
Current period	+0.7	-3	0	+8	+3	+0.2
16th period	0	-4	-6	+9	+7	+6
15th period	-0.9	-4	-3	+14	+6	+4
Mill H						
Current period	+0.9	-1	+1	+6	-2	+1
16th period	+0.7	-3	+0.9	+9	-2	+3
15th period	-0.5	-1	-2	+6	-4	+0.7
Mill J						
Current period	-2	0	-4	0	-0.6	+3
16th period	-1	-1	-5	+4	-16	-12
15th period	-1	+1	-3	+7	+8	+9

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948

Institute Data versus Mill Data																
Basis Weight, lb.		Caliper, points	JUNBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./ sheet									
IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	In	Across	IPC	Mill	Diff.	IPC	Mill	Diff.
<u>Mill A--42-lb. Linerboard</u>																
43.1	14.1	-0.8	14.3	+0.2	105	106	+1	38	44	+6	411 ^a	456	+45	448 ^a	475	+27
42.4	14.4	+0.6	14.5	+0.1	101	104	+3	39	45	+6	412	440	+28	463 ^a	455	- 8
42.8	14.7	-0.5	14.1	-0.6	107	104	-3	35	37	+2	383	402	+19	413 ^a	423	+10
41.8	14.4	+0.3	14.1	-0.3	109	105	-4	37	43	+6	399	447	+48	411 ^a	462	+51
42.6	14.4	-0.2	14.3	-0.1	106	105	-1	37	42	+5	401	436	+35	434	453	+19

Mill B--42-1b. Linerboard

42.9	42.8	-0.1	14.7	14.7	0.0	108	105	-3	33	33	0	367 ^a	361	-6	393 ^a	377	-16
44.7	44.3	-0.4	15.4	15.3	-0.1	108	105	-3	36	34	+2	367 ^a	360	-7	395 ^a	389	-6
44.6	43.8	-0.8	15.3	15.2	-0.1	108	106	-2	35	34	+1	361	369	+8	396 ^a	390	-6
44.7	44.2	-0.5	15.5	15.5	0.0	107	107	0	36	34	+2	381 ^a	376	-5	392 ^a	392	0
44.2	44.3	+0.1	15.0	15.1	+0.1	106	104	-2	36	34	+2	373 ^a	349	-24	397 ^a	376	-21
44.5	44.0	-0.5	14.9	15.0	+0.1	108	104	-4	35	34	+1	379 ^a	342	-37	393 ^a	349	-44
42.6	42.8	+0.2	15.1	15.0	-0.1	106	107	+1	32	34	-2	370 ^a	299	-71	386 ^a	328	-58
43.9	43.7	-0.2	15.0	15.1	+0.1	106	107	+1	33	34	-1	359	389	+30	381 ^a	410	+29
43.7	43.5	-0.2	15.1	15.5	+0.4	114	108	-6	35	35	0	377 ^a	384	+7	416 ^a	406	-10
43.1	42.8	-0.3	14.7	15.0	+0.3	101	102	+1	35	35	0	357	343	-14	418 ^a	383	-35
43.9	43.6	-0.3	15.1	15.1	0.0	107	106	-1	35	34	+1	369	357	-12	397	380	-17

readings for one or more specimens which tore beyond the $3/8$ -inch limit.

the sample; the mill data sheet gives the date of manufacture as November 2, 1948.

the sample; the mill data sheet gives the date of manufacture as November 11, 1948. "Average" data are calculated from the totals of the individual readings.

TABLE XVI

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948

Institute Data versus Mill Data																		
File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO		G. E.		Elmendorf Test g./sheet						
				IPC	Mill Diff.	IPC	Mill Diff.	Mullen Burst, points	Puncture, units	IPC	Mill Diff.	IPC	Mill Diff.	In	IPC			
Mill A--42-lb. Linerboard																		
134381	A-78	11/ 2/48	2	43.1	42.3	-0.8	14.1	14.3	+0.2	105	106	+1	38	44	411 ^a	456	+45	44
134382	A-79	11/ 3/48	2	42.4	43.0	+0.6	14.4	14.5	+0.1	101	104	+3	39	45	412	440	+28	46
134488	A-80	11/15/48	1	42.8	42.3	-0.5	14.7	14.1	-0.6	107	104	-3	35	37	383	402	+19	41
134489	A-81	11/16/48	1	41.8	42.1	+0.3	14.4	14.1	-0.3	109	105	-4	37	43	399	447	+48	41
Current Mill Average:				42.6	42.4	-0.2	14.4	14.3	-0.1	106	105	-1	37	42	401	436	+35	43

TABLE XVII

Mill B-42-lb. Linerboard																		
134391	B-107	10/25/48	3	42.9	42.8	-0.1	14.7	14.7	0.0	108	105	-3	33	33	367 ^a	361	-6	393
134392	B-108	10/26/48	3	44.7	44.3	-0.4	15.4	15.3	-0.1	108	105	-3	34	36	367 ^a	360	-7	395
134393	B-109	10/28/48	1	44.6	43.8	-0.8	15.3	15.2	-0.1	108	106	-2	34	35	361	369	+8	396
134394	B-110	10/29/48	1	44.7	44.2	-0.5	15.5	15.5	0.0	107	107	0	34	36	381 ^a	376	-5	392
134411	B-111	11/ 1/48	1	44.2	44.3	+0.1	15.0	15.1	+0.1	106	104	-2	34	36	373 ^a	349	-24	397
134412	B-112	11/ 1/48 ^b	1	44.5	44.0	-0.5	14.9	15.0	+0.1	108	104	-4	34	35	379 ^a	342	-37	393
134429	B-113	11/ 8/48	1	42.6	42.8	+0.2	15.1	15.0	-0.1	106	107	+1	34	32	370 ^a	299	-71	386
134493	B-114	11/10/48	3	43.9	43.7	-0.2	15.0	15.1	+0.1	106	107	+1	34	33	359	389	+30	381
134494	B-115	11/10/48 ^c	3	43.7	43.5	-0.2	15.1	15.5	+0.4	114	108	-6	35	35	377 ^a	384	+7	416
134565	B-116	11/17/48	3	43.1	42.8	-0.3	14.7	15.0	+0.3	101	102	+1	35	35	357	343	-14	418
Current Mill Average:				43.9	43.6	-0.3	15.1	15.1	0.0	107	106	-1	34	35	369	357	-12	397

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.^b This date was taken from the sample; the mill data sheet gives the date of manufacture as November 2, 1948.^c This date was taken from the sample; the mill data sheet gives the date of manufacture as November 11, 1948.
Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVIII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

asis Weight, lb.	Caliper, points	JUMBO		G. E.		Elmendorf Tear,									
		Mullen Burst,		Puncture,		g./sheet									
		IPC	points	IPC	units	In	Across								
Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.							
<u>Mill C--42-lb. Linerboard</u>															
42.4	-1.3	14.9	14.5	-0.3	104	111	7	37	39	386	351	-35	444	413	-31
42.8	-0.9	14.1	13.9	-0.2	106	112	+6	38	44	397 ^a	372	-25	444 ^a	447	+3
41.9	-0.7	14.6	14.5	0.0	105	106	+1	37	42	371 ^a	384	+13	415 ^a	434	+19
42.1	-0.6	14.8	14.5	-0.3	104	108	+4	37	42	383	394	+11	435 ^a	464	+29
42.5	-1.1	14.8	14.5	-0.3	105	108	+3	37	42	380 ^a	391	+11	421 ^a	452	+31
42.5	-1.1	14.8	14.5	-0.3	106	108	+2	38	42	369	392	+23	417 ^a	452	+35
42.5	-0.4	14.6	14.3	+0.2	107	111	+4	39	46	385	405	+20	420 ^a	471	+51
42.7	0.0	14.7	14.3	+0.1	107	107 ^b	0	39	45	372 ^a	432	+60	435 ^a	475	+40
43.3	-0.4	14.4	14.4	0.0	105	109	+4	40	43	406 ^a	433	+27	444 ^a	466	+22
42.4	-0.6	14.3	14.0	-0.3	100	106	+6	40	42	405	399	-6	453	462	+9
42.5	-0.7	14.6	14.4	-0.2	105	109	+4	38	43	385	395	+10	433	454	+21

gs for one or more specimens which tore beyond the 3/8-inch limit.

that the Mullen burst on the wire side of three of the sheets in this group is higher than the felt side.
data are calculated from the totals of the individual readings.

TABLE XVIII

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		IPC	Caliper, points		IPC	IPC Mill Diff.		JUMBO Mullen Burst, points		IPC	IPC Mill Diff.		IPC	In Mill Diff.	g./sheet	Elmendorf
				lb.	IPC		Mill	Diff.		IPC	Diff.	IPC	Diff.		IPC	Diff.				
Mill C--42-lb. Linerboard																				
134250	C-73	10/25/48	1	43.7	42.4	-1.3	14.9	14.5	-0.3	104	111	+7	37	39	+2	386	351	-35		
134281	C-74	10/28/48	1	43.7	42.8	-0.9	14.1	13.9	-0.2	106	112	+6	38	44	+6	397 ^a	372	-25		
134369	C-75	11/ 1/48	1	42.6	41.9	-0.7	14.6	14.5	0.0	105	106	+1	37	42	+5	371 ^a	384	+13		
134390	C-76	11/ 4/48	1	42.7	42.1	-0.6	14.8	14.5	-0.3	104	108	+4	37	42	+5	383	394	+11		
134422	C-77	11/8/48	1	43.6	42.5	-1.1	14.8	14.5	-0.3	105	108	+3	37	42	+5	380 ^a	391	+11		
134490	C-78	11/11/48	1	43.6	42.5	-1.1	14.8	14.5	-0.3	106	108	+2	38	42	+4	369	392	+23		
134495	C-79	11/15/48	1	42.9	42.5	-0.4	14.6	14.8	+0.2	107	111	+4	39	46	+7	385	405	+20		
134496	C-80	11/15/48	1	42.7	42.7	0.0	14.7	14.8	+0.1	107	107 ^b	0	39	45	+6	372 ^a	432	+60		
134566	C-81	11/22/48	1	43.7	43.3	-0.4	14.4	14.4	0.0	105	109	+4	40	43	+3	406 ^a	433	+27		
134643	C-82	11/25/48	1	43.0	42.4	-0.6	14.3	14.0	-0.3	100	106	+6	40	42	+2	405	399	-6		
Current Mill average:				43.2	42.5	-0.7	14.6	14.4	-0.2	105	109	+4	38	43	+5	385	395	+10		

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.^b The co-operator has pointed out that the Mullen burst on the wire side of three of the sheets in this group is higher than

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIX

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

Basis Weight, lb.	IPC	Mill Diff.	IPC	Caliper, points	IPC	Diff.	JUNCO		IPC	Mill Diff.	IPC	Diff.	IPC	Mill Diff.	IPC	Diff.	IPC	Mill Diff.	IPC	Diff.	IPC	Mill Diff.	IPC	Diff.
							Mullen Burst, points	Puncture, units																
Mill D-42-lb. Linerboard																								
43.1	43.1	0.0	15.7	15.4	-0.3	97	100	+3	35	393 ^a	327	-66	433 ^a	397	-36	382 ^a	351	-16	404 ^a	401	-3	377	-18	
43.3	43.1	-0.2	16.5	15.9	-0.6	105	98	-7	36	403 ^a	341	-62	410 ^a	387	-23	367 ^a	332	-41	395 ^a	400	-11	411 ^a	-11	
42.4	42.4	0.0	15.4	15.7	+0.3	102	102	0	32	382 ^a	335	-47	384 ^a	384	0	373 ^a	356	-23	397 ^a	417	+20	397 ^a	+33	
43.4	43.1	-0.3	15.6	15.1	-0.5	104	101	-3	36	367 ^a	351	-16	404 ^a	401	-3	379 ^a	338	-56	397 ^a	430	+33	397 ^a	+33	
43.5	43.1	-0.4	15.4	15.1	-0.3	104	102	-2	35	373 ^a	332	-41	395 ^a	377	-18	364 ^a	336	-28	420 ^a	418	-2	371 ^a	+32	
44.8	44.9	+0.1	16.0	16.2	+0.2	102	102	0	36	379 ^a	356	-23	411 ^a	400	-11	372 ^a	341	-31	371 ^a	403	+32	423 ^a	0	
43.6	43.6	0.0	15.7	15.7	0.0	114	108	-6	36	394 ^a	338	-56	397 ^a	417	+20	389 ^a	378	-11	423 ^a	423	0	423 ^a	0	
42.8	43.7	+0.9	15.7	15.7	0.0	111	110	-1	36	364 ^a	336	-28	397 ^a	430	+33	382	342	-40	404	403	-1	403	-1	
43.3	43.5	+0.2	15.6	15.7	+0.1	110	106	-4	38	389 ^a	332	-57	420 ^a	418	-2	372 ^a	341	-31	371 ^a	403	+32	423 ^a	0	
42.8	43.2	+0.4	15.7	15.5	-0.2	106	103	-3	37	372 ^a	341	-31	371 ^a	403	+32	389 ^a	378	-11	423 ^a	423	0	423 ^a	0	
42.9	43.0	+0.1	15.9	15.2	-0.7	101	98	-3	37	389 ^a	378	-11	423 ^a	423	0	382	342	-40	404	403	-1	403	-1	
43.3	43.3	0.0	15.7	15.6	-0.1	105	103	-2	36	382	342	-40	404	403	-1	382	342	-40	404	403	-1	403	-1	

TABLE XX

Mill E--42-lb. Linerboard

No samples submitted.

Readings for one or more specimens which tore beyond the 3/8-inch limit.

"e" data are calculated from the totals of the individual readings.

TABLE XIX

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf Tear, g./sheet				
				IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	IPC	Mill Diff.	In	IPC	Mill Diff.		
Mill D-42-lb. Linerboard																
134321	D-50	10/30/48	4	43.1	43.1	0.0	15.7	15.4	-0.3	97	100	+3	35	393 ^a	327	-66
134322	D-51	10/31/48	4	43.3	43.1	-0.2	16.5	15.9	-0.6	105	98	-7	36	403 ^a	341	-62
134336	D-52	11/1/48	4	42.4	42.4	0.0	15.4	15.7	+0.3	102	102	0	32	382 ^a	335	-47
134366	D-53	11/3/48	4	43.4	43.1	-0.3	15.6	15.1	-0.5	104	101	-3	36	367 ^a	351	-16
134406	D-54	11/6/48	4	43.5	43.1	-0.4	15.4	15.1	-0.3	104	102	-2	35	373 ^a	332	-41
134407	D-55	11/7/48	4	44.8	44.9	+0.1	16.0	16.2	+0.2	102	102	0	36	379 ^a	356	-23
134486	D-56	11/16/48	4	43.6	43.6	0.0	15.7	15.7	0.0	114	108	-6	36	394 ^a	338	-56
134487	D-57	11/17/48	4	42.8	43.7	+0.9	15.7	15.7	0.0	111	110	-1	36	364 ^a	336	-28
134507	D-58	11/18/48	4	43.3	43.5	+0.2	15.6	15.7	+0.1	110	106	-4	38	389 ^a	332	-57
134508	D-59	11/19/48	4	42.8	43.2	+0.4	15.7	15.5	-0.2	106	103	-3	37	372 ^a	341	-31
134549	D-60	11/20/48	4	42.9	43.0	+0.1	15.9	15.2	-0.7	101	98	-3	37	389 ^a	378	-11
Current Mill Average:				43.3	43.3	0.0	15.7	15.6	-0.1	105	103	-2	36	382	342	-40

TABLE XX

Mill E--42-lb. Linerboard

No samples submitted.

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

Basis Weight, lb.			Caliper, points		JUMBO Mullen Burst, points			G. E. Puncture, units		Elmendorf Tear, g./sheet			Across				
IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.			
<u>Mill F-42-lb. Linorboard</u>																	
42.5	42.2	-0.3	14.9	14.8	-0.1	105	104	-1	34	39	+5	328	324	-4	397 ^a	387	-10
45.0	44.4	-0.6	16.0	15.8	-0.2	98	95	-3	39	46	+7	387	391	+4	417 ^a	453	+36
44.5	44.2	-0.3	15.8	15.1	-0.7	99	99	0	44	42	-2	390	388	-2	413 ^a	434	+21
44.7	44.5	-0.2	17.0	16.2	-0.8	94	95	+1	41	43	+2	363	378	+15	430	441	+11
43.2	43.1	-0.1	15.5	15.1	-0.4	98	100	+2	40	40	0	366	340	-26	431	406	-25
43.6	43.2	-0.4	15.5	15.1	-0.4	105	101	-4	40	41	+1	389	372	-17	441 ^a	440	-1
42.4	41.7	-0.7	15.7	15.0	-0.7	100	96	-4	39	42	+3	366	362	-4	427 ^a	432	+5
43.7	43.3	-0.4	15.8	15.3	-0.5	100	99	-1	40	42	+2	370	365	-5	422	428	+6

TABLE XXII

Mill G-42-lb. Linerboard

43.4	43.2	-0.2	13.8	13.5	-0.3	111	101	-10	36	40	44	385	396	+11	407 ^a	413	+ 6
42.0	42.5	+0.5	13.6	13.0	-0.6	103	104	+1	37	39	+2	355 ^a	379	+14	409 ^a	409	0
41.6	42.8	+1.2	14.9	14.2	-0.7	105	102	-3	33	38	+5	325	354	+29	388 ^a	397	+ 9
43.7	43.5	-0.2	15.1	14.2	-0.9	104	101	-3	38	41	+3	373 ^a	380	+ 7	421 ^a	403	- 18
42.5	42.5	0.0	12.9	12.5	-0.4	103	111	+8	34	34	0	337 ^a	344	+ 7	391 ^a	376	- 15
43.1	43.6	+0.5	14.5	14.2	-0.3	102	109	+7	38	41	+3	377	387	+10	402 ^a	411	+ 9
42.0	42.2	+0.2	14.6	14.5	-0.1	101	99	-2	38	41	+3	359 ^a	367	+ 8	401 ^a	404	+ 3
41.7	42.0	+0.3	14.9	14.4	-0.5	105	100	-5	37	40	+3	376	365	-11	391 ^a	399	+ 8
42.5	42.8	+0.3	14.3	13.8	-0.5	104	104	0	36	39	+3	362	372	+10	401	402	+ 1

"age" data are calculated from the totals of the individual readings.

readings for one or more specimens which tore beyond the $3/8$ -inch limit.

sample; the mill data sheet gives the date of manufacture as November 8, 1948.

e sample; the mill data sheet gives the date of manufacture as November 12, 1948.

TABLE XXI

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO		G. E.		Elmendorf					
				IPC	Mill Diff.	IPC	Mill Diff.	Mullen Burst, points		Puncture, units		IPC	Mill Diff.	In Mill Diff.	g./shee		
								IPC	Mill Diff.	IPC	Mill Diff.						
<u>Mill F--42-lb. Linerboard</u>																	
134337	F-64	10/27/48	--	42.5	42.2	-0.3	14.9	14.8	-0.1	105	104	-1	34	39	328	324	-4
134338	F-65	10/30/48	--	45.0	44.4	-0.6	16.0	15.8	-0.2	98	95	-3	39	46	387	391	+4
134428	F-66	11/6/48	--	44.5	44.2	-0.3	15.8	15.1	-0.7	99	99	0	44	42	390	388	-2
134471	F-67	10/8/48 ^b	--	44.7	44.5	-0.2	17.0	16.2	-0.8	94	95	+1	41	43	363	378	+15
134472	F-68	11/10/48	--	43.2	43.1	-0.1	15.5	15.1	-0.4	98	100	+2	40	40	366	340	-26
134505	F-69	11/10/48 ^c	--	43.6	43.2	-0.4	15.5	15.1	-0.4	105	101	-4	40	41	389	372	-17
134528	F-70	11/13/48	--	42.4	41.7	-0.7	15.7	15.0	-0.7	100	96	-4	39	42	366	362	-4
Current Mill Average:				43.7	43.3	-0.4	15.8	15.3	-0.5	100	99	-1	40	42	370	365	-5

TABLE XXII

Mill G--42-lb. Linerboard													
134367	G-98	11/3/48	1	43.4	43.2	-0.2	13.8	13.5	-0.3	111	101	-10	36
134368	G-99	11/4/48	1	42.0	42.5	+0.5	13.6	13.0	-0.6	103	104	+1	37
134434	G-100	11/9/48	1	41.6	42.8	+1.2	14.9	14.2	-0.7	105	102	-3	33
134435	G-101	11/12/48	1	43.7	43.5	-0.2	15.1	14.2	-0.9	104	101	-3	38
134497	G-102	11/15/48	1	42.5	42.2	0.0	12.9	12.5	-0.4	103	111	+8	34
134498	G-103	11/17/48	1	43.1	43.6	+0.5	14.3	14.2	-0.3	102	109	+7	38
134526	G-104	11/22/48	1	42.0	42.2	+0.2	14.6	14.5	-0.1	101	99	-2	38
134527	G-105	11/22/48	1	41.7	42.0	+0.3	14.9	14.4	-0.5	105	100	-5	37
Current Mill Average:													
				42.5	42.8	+0.3	14.3	13.8	-0.5	104	104	0	36
													39
													362
													372
													+10

Current Mill Average:

Note: All "current mill average" data are calculated from the totals of the individual readings.

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.^b This date was taken from the sample; the mill data sheet gives the date of manufacture as November 8, 1948.^c This date was taken from the sample; the mill data sheet gives the date of manufacture as November 12, 1948.

TABLE XXIX

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1. THROUGH NOVEMBER 30, 1948--continued

[illegible]

readings for one or more specimens which toro beyond the 3/8-inch limit.

"age" data are calculated from the totals of the individual readings.

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 19 48--cont'd

TABLE XXII

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight,		IPC	Caliper, points		JUMBO Mullen Burst, points		IPC	G. E. Puncture, units		IPC	Mill Diff.	IPC	Mill Diff.	Elmendor g./ε	In	
				IPC	lb.		Mill	Diff.	IPC	Diff.		IPC	Diff.							IPC
Mill H--42-lb. Linerboard																				
134251	H-79	10/25/48	3	42.6	43.4	42.6	43.4	+0.8	15.0	14.4	-0.6	101	105	+4	34	36	+2	375	340	-35
134252	H-80	10/25/48	2	41.4	42.7	41.4	42.7	+1.3	15.4	15.2	-0.2	100	101	+1	33	38	+5	383 ^a	377	- 6
134253	H-82	10/26/48	2	43.0	42.7	43.0	42.7	-0.3	15.2	15.2	0.0	101	101	0	35	38	+3	391 ^a	399	+ 8
134377	H-83	11/ 2/48	2	41.9	42.2	41.9	42.2	+0.3	14.6	14.1	-0.5	109	112	+3	33	34	+1	356 ^a	359	+ 3
134380	H-84	11/ 3/48	2	43.7	43.4	43.7	43.4	-0.3	15.1	15.1	0.0	108	107	-1	36	38	+2	391 ^a	370	-21
134430	H-85	11/ 8/48	3	42.7	43.1	42.7	43.1	+0.4	14.7	14.6	-0.1	103	104	+1	37	39	+2	347	371	+24
134431	H-86	11/ 9/48	3	42.3	42.8	42.3	42.8	+0.5	14.5	14.5	0.0	107	107	0	34	38	+4	357	372	+15
134499	H-87	11/15/48	2	43.1	43.4	43.1	43.4	+0.3	15.4	15.0	-0.4	104	105	+1	37	38	+1	387	378	- 9
134506	H-88	11/16/48	2	43.5	43.5	43.5	43.5	0.0	15.0	15.0	0.0	103	104	+1	36	36	0	403 ^a	376	-27
134568	H-89	11/22/48	2	42.7	43.3	42.7	43.3	+0.6	14.2	14.4	+0.2	111	107	-4	36	38	+2	395	373	-22
134569	H-90	11/23/48	2	42.7	43.4	42.7	43.4	+0.7	14.5	14.2	-0.3	110	109	-1	35	38	+3	401 ^a	368	-33
Current Mill Average:			:	42.7	43.1	42.7	43.1	+0.4	14.9	14.7	-0.2	105	106	+1	35	37	+2	380	371	- 9

^a This average includes the readings for one or more specimens which were beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIV
SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continued

Institute Data versus Mill Data																	
C	Basis Weight, lb.	IPC	Caliper, points	JUMBO		G. E.		Elmendorf Tear,		IPC		IPC		IPC	IPC	IPC	
				Diff.	IPC	Mullen Burst, points	Puncture, units	In	g./sheet	Diff.	Diff.	Diff.	Diff.				
																	Diff.
Mill J--42-lb. Linerboard																	
.9	42.7	-1.2	14.5	14.2	-0.3	105	102	-3	31	29	-2	308 ^a	254	-54	356 ^a	299	-57
.8	41.5	-1.3	15.3	15.0	-0.3	99	96	-3	30	27	-3	314 ^a	304	-10	363 ^a	381	+18
.6	43.0	-0.6	14.4	15.0	+0.6	101	93	-8	33	36	+3	351 ^a	381	+30	371 ^a	421	+50
.7	43.9	+0.2	13.8	14.4	+0.6	103	94	-9	31	34	+3	340 ^a	371	+31	347 ^a	434	+87
.1	42.5	-0.6	14.0	14.2	+0.2	111	100	-11	30	23	-2	311 ^a	283	-28	359 ^a	349	-10
.0	42.3	-0.7	14.0	14.1	+0.1	107	101	-6	30	32	+2	328	372	+44	355 ^a	402	+47
.6	42.6	-1.0	14.3	13.9	-0.4	109	106	-3	32	33	+1	331 ^a	340	+9	354 ^a	377	+23
.5	42.9	-0.6	15.5	15.4	-0.1	97	97	0	33	34	+1	335	365	+30	348 ^a	406	+58
.4	41.4	-1.0	14.3	14.2	-0.1	102	103	+1	31	28	-3	333 ^a	293	-40	382 ^a	326	-56
.4	42.2	-1.2	14.1	13.9	-0.2	109	104	-5	33	28	-5	327 ^a	293	-34	383 ^a	340	-43
.3	42.5	-0.8	14.4	14.4	0.0	104	100	-4	31	31	0	328	326	-2	362	374	+12

ings for one or more specimens which tore beyond the 3/8-inch limit.

data are calculated from the totals of the individual readings.

TABLE XXIV

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948--continue

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO Mullen Burst, points		G. E. Puncture, units		Elmendorf In g./she						
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.			
Mill J--42-lb. Linerboard																		
134282	J-85	10/29/48	1	43.9	42.7	-1.2	14.5	14.2	-0.3	105	102	-3	31	29	-2	308 ^a	254	-54
134283	J-86	10/29/48	1	42.8	41.5	-1.3	15.3	15.0	-0.3	99	96	-3	30	27	-3	314 ^a	304	-10
134378	J-87	11/ 4/48	1	43.6	43.0	-0.6	14.4	15.0	+0.6	101	93	-8	33	36	+3	351 ^a	381	+30
134379	J-88	11/ 6/48	1	43.7	43.9	+0.2	13.8	14.4	+0.6	103	94	-9	31	34	+3	340 ^a	371	+31
134432	J-89	11/12/48	1	43.1	42.5	-0.6	14.0	14.2	+0.2	111	100	-11	30	23	-2	311 ^a	283	-28
134433	J-90	11/12/48	1	43.0	42.3	-0.7	14.0	14.1	+0.1	107	101	-6	30	32	+2	328	372	+44
134550	J-91	11/20/48	1	43.6	42.6	-1.0	14.3	13.9	-0.4	109	106	-3	32	33	+1	331 ^a	340	+9
134551	J-92	11/20/48	1	43.5	42.9	-0.6	15.5	15.4	-0.1	97	97	0	33	34	+1	335	365	+30
134552	J-93	11/24/48	1	42.4	41.4	-1.0	14.3	14.2	-0.1	102	103	+1	31	28	-3	333 ^a	293	-40
134553	J-94	11/24/48	1	43.4	42.2	-1.2	14.1	13.9	-0.2	109	104	-5	33	28	-5	327 ^a	293	-34
Current Mill Average:				43.3	42.5	-0.8	14.4	14.4	0.0	104	100	-4	31	31	0	328	326	-2

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXV

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data																	
asis Weight, lb.	IPC Mill Diff.	Caliper, points	JUNBO		IPC Mill Diff.	G. E.		IPC Mill Diff.	Elmendorf Tear,		IPC Mill Diff.	Across					
			Mullen Burst, points	Puncture, units		g./sheet	In		IPC Mill Diff.	IPC Mill Diff.							
<u>Mill E--44/46-lb. Drum Linerboard</u>																	
5.7	46.4	-0.3	13.0	13.2	+0.2	90	96	+6	39	40	+1	425 ^a	455	+30	413 ^a	490	+77
3.2	48.3	+0.1	13.8	13.6	-0.2	112	119	+7	41	40	-1	447 ^a	436	-11	461	488	+27
3.1	48.0	-0.1	14.0	13.8	-0.2	95	106	+11	43	40	-3	497 ^a	477	-20	456 ^a	496	+40
3.6	47.9	-0.7	14.2	13.9	-0.3	94	102	+8	42	40	-2	469 ^a	492	+23	434 ^a	479	+45
7.9	47.6	-0.3	13.8	13.6	-0.2	98	106	+8	41	40	-1	460	465	+5	441	488	+47

ings for one or more specimens which tore beyond the 3/8-inch limit.

" data are calculated from the totals of the individual readings.

TABLE XXV

SUMMARY OF INDIVIDUAL TEST LOTS--NOVEMBER 1 THROUGH NOVEMBER 30, 1948 --continued

Institute Data versus Mill Data

File No.	Mill Code	Date Made	Mch. No.	Basis Weight, lb.		Caliper, points		JUMBO		G. E.		In IPC Mill Diff.	Elmendorf g./sheet			
				IPC	Mill Diff.	IPC	Mill Diff.	Mullen Burst, points	Puncture, units							
<u>Mill E--44/46-lb. Drum Linerboard</u>																
134365	E-45	11/ 4/48	1	46.7	46.4	-0.3	13.0	13.2	+0.2	90	96	39	40	425 ^a	455	+30
134410	E-46	11/ 8/48	1	48.2	48.3	+0.1	13.8	13.6	-0.2	112	119	41	40	447 ^a	436	-11
134491	E-47	11/16/48	1	48.1	48.0	-0.1	14.0	13.8	-0.2	95	106	43	40	497 ^a	477	-20
134548	E-48	11/23/48	1	48.6	47.9	-0.7	14.2	13.9	-0.3	94	102	42	40	469 ^a	492	+23
Current Mill Average:				47.9	47.6	-0.3	13.8	13.6	-0.2	98	106	41	40	460	465	+5

^a This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

